

RESENT AVAIL AND COPIES

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND claims 1, 3, 4, 6, 7, 10, 12, 13, 16, and 19 in accordance with the following:

1. (PRESENTLY AMENDED) A two-dimensional code extraction method comprising:
 - inputting image data;
 - scanning said input image data in a square block unit of $M \times N$ pixels (M and N are positive integers);
 - detecting blocks that satisfy specific conditions from said scanned blocks;
 - detecting a region comprising the maximum number of neighboring and contiguous blocks among said detected blocks; and
 - extracting said detected region as the two-dimensional code region.
2. (ORIGINAL) The two-dimensional code extraction method according to claim 1, wherein a block that includes a ratio of white pixels and black pixels that falls within a specific range is detected as a block satisfying said specific conditions.
3. (PRESENTLY AMENDED) The two-dimensional code extraction method according to claim 1, wherein a block that includes a ratio between transition points of pixels within the horizontal lines and/or or vertical lines of the block and the total number of pixels of the block that falls within a specific range is detected as a block satisfying said specific conditions.
4. (PRESENTLY AMENDED) The two-dimensional code extraction method according to claim 1, wherein a block in which variation of a vertical and/or or horizontal projection of the black pixels included in each of the lines in the blocks fall within a specific range is detected a block satisfying said specific conditions.

5. (ORIGINAL) The two-dimensional code extraction method according to claim 1, further comprising:

detecting a region including specific numbers of blocks from said detected region comprising the neighboring and contiguous blocks; and
determining said detected region as a two-dimensional code region.

6. (PRESENTLY AMENDED) The two-dimensional code extraction method according to claim 1, further comprising:

scanning said detected two-dimensional code region from a point within said two-dimensional code region block by block having a predetermined size upward, downward, to the right and to the left of said point;

detecting a position such that a number of black pixels within said scanned block is less ~~than~~than a predetermined value; and

extracting a square area including said detected position as a two-dimensional code region.

7. (PRESENTLY AMENDED) A two-dimensional code extraction method according to claim 1, further comprising:

calculating average distance between pairs of black pixels within said scanned blocks; and

extracting said scanned block as a two-dimensional code when ~~it is determined that a determination is made that~~ said calculated average distance exceeds a predetermined value.

8. (ORIGINAL) The two-dimensional code extraction method according to claim 1, further comprising:

determining an angle of inclination of the two-dimensional code; and
correcting for the angle of inclination if the angle of inclination exceeds a specific value.

9. (ORIGINAL) The two-dimensional code extraction method according to claim 1, further comprising:

detecting the two-dimensional code from a maximum number of detected contiguous blocks.

10. (PRESENTLY AMENDED) A computer-readable medium storing a program which, when executed by a computer, causes the computer to execute a two-dimensional code extraction method comprising:

inputting image data;

scanning said input image data in a square block unit of $M \times N$ pixels (M and N are positive integers);

detecting blocks that satisfy specific conditions from said scanned blocks;

detecting a region comprising the maximum number of neighboring and contiguous blocks among said detected blocks; and

extracting said detected region as the two-dimensional code region.

11. (ORIGINAL) The computer-readable medium according to claim 10, wherein a block that includes a ratio of white pixels and black pixels that falls within a specific range is detected as a block satisfying said specific conditions.

12. (PRESENTLY AMENDED) The computer-readable medium according to claim 10, wherein a block that includes a ratio between transition points of pixels within the horizontal lines and/or vertical lines of the block and the total number of pixels of the block that falls within a specific range is detected as a block satisfying said specific conditions.

13. (PRESENTLY AMENDED) The computer-readable medium according to claim 10, wherein a block in which variation of a vertical and/or horizontal projection of the black pixels included in each of the lines in the blocks fall within a specific range is detected a block satisfying said specific conditions.

14. (ORIGINAL) The computer-readable medium according to claim 10, further comprising:

detecting a region including specific numbers of blocks from said detected region comprising the neighboring and contiguous blocks; and

determining said detected region as a two-dimensional code region.

15. (ORIGINAL) The computer-readable medium according to claim 10, further comprising:

scanning said detected two-dimensional code region from a point within said two-dimensional code region block by block having a predetermined size upward, downward, to the right and to the left of said point;

detecting a position such that a number of black pixels within said scanned block is less than a predetermined value; and

extracting a square area including said detected position as a two-dimensional code region.

16. (PRESENTLY AMENDED) The computer-readable medium according to claim 10, further comprising:

calculating average distance between pairs of black pixels within said scanned blocks; and

extracting said scanned block as a two-dimensional code when ~~it is determined a determination is made~~ that said calculated average distance exceeds a predetermined value.

17. (ORIGINAL) The computer-readable medium according to claim 10, further comprising:

determining an angle of inclination of the two-dimensional code; and

correcting for the angle of inclination if the angle of inclination exceeds a specific value.

18. (ORIGINAL) The computer-readable medium according to claim 10, further comprising:

detecting the two-dimensional code from a maximum number of detected contiguous blocks.

19. (PRESENTLY AMENDED) An apparatus for extracting two-dimensional code from a input document, comprising:

an image scanning unit for scanning the document, and outputting input image data;

a processing unit, connected to said image scanning unit, for processing two-dimensional code extraction process, by scanning said input image data in a square block unit of $M \times N$ pixels (M and N are positive integers), detecting blocks that satisfy specific conditions from said scanned blocks, detecting a region comprising the maximum number of neighboring and contiguous blocks among said detected blocks, and extracting said detected region.

20. (ORIGINAL) The apparatus for extracting two-dimensional code according to claim 19, further comprising means for reading information from a computer-readable medium contains computer software for said two-dimensional code extraction process.